GLOSSARY OF GIS TERMS

NOTE: The following list does not represent a complete explanation of technical GIS vocabulary, but is instead representative of words and abbreviations commonly used by the GIS Department. It is not our intention to cover all possible meanings nor guarantee that all definitions are technically correct.

Analytic Triangulation	**A method of ground control extension or densification that is performed mathematically and in conjunction with existing ground control.**
Annotation	**Textual information contained in the database (i.e., with labels and names).**
Attribute	**A term for information consisting of text and numbers that can be searched and sorted based on specific criteria. This non-graphic data can be linked to the graphic data.**
Attribute Annotation	**Display of attributes attached to an attribute data type (see attribute data type).**
Attribute Data Type	**Data that consists of graphic elements that have specific textual data associated with them; also called a facility data type.**
AutoCAD	**A commercial software 'CAD' product that is widely used throughout the GIS industry.**
Azimuth	**The horizontal direction of a line measured clockwise from a reference plane, usually the meridian. Used with a survey control point.**
Base Line	**A carefully surveyed reference line upon which land surveys are based.**
Base Map	**A map containing a variety of features used for locational reference. Base maps typically include streets, buildings, topography, hydrography, etc.**
Bearing	**Number of degrees from 0 degrees to 90 degrees east or west of a north/south line.**
Bench Mark	**A permanently marked metal disk in the ground showing an established elevation control point.**
CAD	**Computer Aided Design. An automated system for the design, drafting and display of graphically oriented information. Also known as Computer Aided Design and Drafting (CADD).**
Cadastral	**A survey relating to land boundaries and subdivisions. Made to create units suitable for transfer or to define the limitations of title. Derived from cadastre (meaning register of the real property of a political subdivision with details of area, ownership, and value), the term is now used to designate the surveys of the public lands of the United States, including retracement surveys for the identification and resurveys for the restoration of property lines.**
Cadastral Data/Maps	**Data that pertains to the delineation of property ownership, i.e., lot lines, parcel lines, subdivision boundaries; also referred to as appraisal information. Graphic depiction of the cadastral information is shown on 'property maps.'**
Cartography	**The art and science of expressing graphically, by maps and charts, the known physical features of the earth.**

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Centroid	**A graphic symbol, usually a dot, which can be accessed to retrieve attribute data (as in 'property centroid').**
COGO	**1) An abbreviation for Coordinate Geometry that refers to a system's ability to perform geometric functions, using coordinate points established in the database (see also coordinate system). 2) A coordinate geometry software package typically used by land surveyors to enter distances and bearings from reference points to calculate location points.**
Composite	**Hard-copy product made by registering two or more overlays to produce one map with combined data.**
Contour Interval	**The difference in elevation between adjacent contours.**
Contours	**Map lines that connect areas of equal elevation (expressed in feet above sea level). Often shown with spot elevations.**
Control	**A system of points with established positions or elevations or both, which are used as fixed references for position and correlating map features (ground control).**
Coordinate System	**A reference system which determines a specific numeric designation (coordinate) for any point within a geographically referenced area, based on its location relative to all other points in that area.**
Coordinate	**A set of numbers that determines the location of a point on a grid. Coordinates are used to arrange points into the proper relative positions to each other.**
Criteria Map	**A map, which utilizes graphic data combined with the 'intelligence' associated with corresponding nongraphic data, to produce a plot, which graphically depicts the statistical situation that has been programmed into the computer.**
Data Item	**A delineation of data within a data layer. In MetaMAP, it is possible to differentiate 256 data items within each data layer; i.e., 08011 paved roadways and 08012 unpaved roadways are two of the data items within data layer 08 – primary transportation. Assigned data may be graphic and/or nongraphic elements.**
Data Layer	**Refers to data having similar characteristic being contained in the same plane or overlay (e.g. roads, rivers). Usually information contained in a data layer is related and designed to be used with other layers.**
Diapositive	**A positive photograph on a transparent medium, usually polyester or glass. The term is generally used to refer to a transparency used in a plotting instrument, a projector or a comparator.**
Digitize	**A process involving a sensitized table and a cursor with crosshairs and keys used to electronically record the geographic locations of map features as x, y coordinates.**
DTM	**Digital Terrain Model. A land surface represented in digital form by an elevation grid or lists of 3-D coordinates.**
DWG File	**An AutoCAD drawing file named for its 'DWG' extension.**

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DXF File	**An AutoCAD drawing exchange file named for its DXF extension.**
Edgematching	**Editing procedure for connecting arcs and polygons that cross tie boundaries. Ensures the features intersect the boundary at a common, coincident point. Allows features to be viewed in their entirety.**
Element	**The term for a graphic component in a design. An element can be a circle, an arc, a line, an ellipse, or even a complex group of these parts. The computer sees and manipulates an element as a single unit.**
Elevation	**The vertical distance of a point on the ground as measured above sea level. Differs from 'altitude,' which is a measurement of a point above the ground.**
Facet	**A standard grid unit into which information is geographically referenced for storage in the database. The Franklin County database is made up of 2,620 facets, each measuring 2,500 ft. by 2,500 ft., based upon State Plane Coordinates.**
Facility Data Type	**See 'Attribute Data Type.'**
Flat File	**A tabular data structure commonly used as an interchange format for the loading and exchange of digital data; also called a sequential file. (Flat files have no intelligence.)**
Geocode	**A spatial index code (e.g., addresses, parcel numbers) identifying unique points, lines or areas that are stored in both graphic and nongraphic data.**
GIS	**Geographic Information System. A computer graphics system that allows the input, query, manipulation, display and output of geographically referenced information. A GIS is a database of geographic features stored as a series of relationships.**
GPS	**Global Positioning System. A survey system that measures point locations and distances on earth by use of extremely accurate survey satellites and sensitive ground receivers.**
Graphic Element	**A single line, curve, shape or symbol used to pictorially represent an item, such as a valve, water line or building.**
Graphic Annotation	**Text that appears on a map as part of the map's features.**
Hydrology	**Lakes, streams, swamps and other drainage features. "Hydrography" – the symbols and outlines representing these features on a map.**
Index (Map)	**A numbered grid over a base map used to locate a hard copy or facet map in the computer. (The Franklin County Auditor's map has two indexes – facet indexes for the computer a polygon index for hard-copy plots).**
Interpolate	**Logical judgment assigned to an unknown point, by use of data from two or more known points.**
Latitude/Longitude	**Latitude is the north-south measurement of the earth parallel to the equator. Longitude is the east-west measurement of the earth measured from the Greenwich Meridian, in Greenwich, England, where the system was created. Conceptually latitude/longitude can be thought of as a 'global state plane grid.'**

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Layering	**A method of logically organizing a computer graphics database by 'overlaying' each group of information one on top of the other.**
MetaMAP®	**A commercial full-function PC-based GIS software program.**
Metes and Bounds	**A method of describing a parcel boundary by means of distance, direction and land references. Especially useful in describing irregularly shaped parcels.**
Monument	**A boundary marker either natural (river, stone, etc.) or man-made (post, iron pin, etc.) used to document a survey description.**
National Map	**A comprehensive document produced by the National Geodetic Survey that outlines stringent accuracy standards and tolerances that are expected to be adhered to by the mapping industry.**
Node	**Similar to access centroid, except its geographic location is registered (e.g., DAM uses nodes to access street intersections).**
Nonfacility Data Type	**A data type that contains only graphic data elements with no associated attribute data.**
Northing/Easting	**Survey term for the longitude and latitude coordinate numbers that appear on the margins of our hard copy standard plots. The Auditor's Office uses these numbers to name facets.**
Orthophotograph	**A photograph that has been scale-corrected so that image displacement caused by camera tilt and relief of terrain are removed.**
Parcel	**A map feature depicting land ownership and rights. Parcel boundaries usually are described in narrative form on a deed as metes and bounds or bearings and distances.**
Parcel Identifier	**A number scheme for identifying parcels in a computer system. Parcel identification schemes range from a simple sequential number to a geocode that also defines location by incorporating x and y coordinates for the parcel.**
Photo Control Points	**Aerial photo, which has ground, coordinates that have been identified by a ground control survey. These points must be identifiable on the photographs either by flagging (targeting) or well-defined points (for example, the corner of a sidewalk, the base of a pole, etc.).**
Photogammetry	**The art, science and technology of obtaining reliable information about physical objects and the environment, through processes of recording, measuring and interpreting images and patterns of 'electromagnetic radiant energy' (usually photography). The most common form of photogrammetry is aerial photographic mapping.**
Pixel	**Short for 'picture element.' The smallest visual element (illuminated dot), which makes up an image on a computer screen.**
Planimetric	**The cultural (man-made) and hydrological (lakes, rivers, streams, ponds) features of the earth.**
Planimetric Map	**A map that represents the horizontal position of 'man-made' (cultural) features like streets and buildings, combined with natural features such as lakes and rivers (hydrography). It is different from a topographic map because of the omission of measurable relief.**
Plat	**A scale diagram void of cultural, drainage and relief features, showing only land boundaries and subdivisions together with data essential to the legal description.**

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Plot File	**A stored image comprised of graphic elements selected from the base map. Plot files can be plotted on a plotter to create an accurate hard copy representation of the stored image.**
Polygon	**1) A map sheet east of the Scioto River, covering an area slightly larger than a facet that aligns street surveys parallel with the edge of the sheet. Numbered by Section, Township, Range, etc.** **2) Any area that has three or more sides and is closed.**
Quads	**Quadrangle Maps. A rectangular or nearly rectangular area covered by a map or plat, usually bounded by given meridians of longitude and parallels of latitude. The U.S. Geological Survey Quads are the most common example.**
Raster	**A grid-type data format used to interpret gray-scale photographs and other documents. Imagery is stored as dots or pixels, each with a different shade or density. This structure is commonly used to store image data, and is usually captured by use of a video scanner.**
Ratio Scale	**A statement of distance measured on a map and the equivalent distance measured on the earth, expressed as a representative fraction, such as 1:24,000. This means that one unit of distance on the map represents 24,000 of the same units of distance on the earth. To convert to inches and feet, divide by 12; thus 1" = 2,000'.**
Remote Sensing	**Recording and analyzing image data from a distance. Aerial photography is the most common form of remote sensing.**
Resolution	**The smallest spacing between two display elements that will allow the elements to be distinguished visually on the CRT.**
Rubber Sheeting	**A procedure to adjust the features of a map in a nonuniform manner. Often referred to as 'forced fit.'**
Scale	**The relationship between the sizes of the original (ground) of the reproduction (map).**
Schema	**Determines what type of data is sorted in the database and how that data is organized.**
Schematic Map	**A map showing the general layout of items relative to each other, without detailed or accurate control work. For example, utility mapping is usually in schematic form.**
Shapefile	**Translation file consisting of three files .shp; .shx; .dbf. Utilized for data distribution purposes.**
Source Material	**Information or data known to be available. Empirical or 'off-the-shelf' resources such as library files and official records.**
Spatial Data	**Information about the location, shape and relationships among geographic features, usually stored as coordinates and topography.**
Spot Elevations	**Points on a map that depict elevation above sea level for that location.**

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State Plane Coordinate System	**A standard survey grid covering the entire United States, with a separate system of coordinates for each site.**
Stereoplotter	**An optical device used in photogrammetric mapping to digitize the horizontal position and elevation of selected points and features visible in aerial photographs. Creates maps by use of aerial photography.**
Table Driven System	**A system that stores graphic data and their representations (line patterns, fonts and colors) independently of each other, thus allowing a multitude of display options while reducing unnecessary database storage.**
Target	**A 'T' or '+' shaped marking placed on the ground over a geodetic or ground-point marker, to be later identified on an aerial photograph. Also called 'flagging.'**
Thematic Map	**1) A map depicting a particular set of circumstances or theme. Also, see criteria map. 2) A map related to a specific topic, theme or subject. Also called criteria, special purpose or distribution maps. Thematic maps emphasize a single topic such as vegetation types, geology characteristics, and land use or land values.**
TIGER	**Topologically Integrated Geographic Encoding and Referencing. Data format used by the U.S. Census Bureau to support census programs and surveys. TIGER files contain street address ranges along lines and census tract and block boundaries. This descriptive data can be used to associate address information, census, and demographic data to coverage features.**
Topographic	**Collective features of the earth, including hypsography (relief features such as contours and spot elevations), hydrography (water and drainage features), planimetric (cultural and man-made features) and geodetic (all pertinent survey control points and geographic boundaries).**
Topographic Map	**Map that combines planimetric detail with contours to show the relief of the land.**
Township/Range/ Tier/Section	**Township is the basic unit of the rectangular survey system established by the federal government. Range is a column of townships extending north and south. Tier is a row of townships extending east and west. Section is a subdivision of a township.**
Triangulation	**See Analytic Triangulation.**
Vector	**A coordinate-based (x, y linear feature) structure commonly used to represent map features.**
VMS	**1) Virginia Military Survey. One of four early land survey systems used when dividing land for the original settlers of Franklin County. 2) Virtual Memory System. The capability of a computer system's main memory to access and efficiently use data and programs stored separately on disk drives. Virtual storage techniques allow a processor to handle large programs and data sets from multiple users. Programs are segmented in 'pages' that can be accessed by main memory and retrieved separately from auxiliary.**
'XYZ' Axis	**Directional orientation under which all geographic information is recorded in the database as follows: 'X' = horizontal (east/west), 'Y' = vertical (north/south), 'Z' = elevation (relief).**